

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A structure for representing a query statement having an atomic query element and a combined query element related by a combined operator, the atomic query element being a noniterative query element, the combined query element including a left subelement and a right subelement, the structure being stored on a computer readable storage medium, the structure comprising:

an abstract superclass, wherein an instance of the abstract super class represents the query statement and includes an operation on a combination of the combined operator, the atomic query element, and the combined query element, wherein the combined query element comprises an iterative query language element, the superclass further comprising:

a first subclass, wherein an instance of the first subclass represents the atomic query element;

a second subclass, wherein an instance of the second subclass represents the combined query element including the left subelement and the right subelement, ~~and~~ wherein each of the left subelement and the right subelement are representable by an instance of the first subclass or the second subclass of the abstract superclass, wherein the instance of the abstract superclass represents a table reference, wherein the instance of the first subclass represents an unjoined table, and wherein the instance of the second subclass represents a joined table; and

a relationship indicator representing a relationship between the first subclass and the second subclass as defined by the combined operator;
means for receiving the query statement having the atomic query element and the combined query element associated by the combined operator;
means for populating the structure respectively with instances of the abstract superclass, the first subclass, and the second subclass that represent the received query statement;
means responsive to selection of a given instance populated within the structure, for retrieving query elements represented by the given instance; and,
means for building a query statement from the retrieved query elements.

2-4. (Cancelled)

5. (Previously Presented) The structure of claim 1, wherein:
the instance of the abstract superclass represents a value expression;
the instance of the first subclass represents an atomic value expression; and
the instance of the second subclass comprises a combined value expression.
6. (Previously Presented) The structure of claim 1, wherein:
the instance of the abstract superclass represents a search condition;
the instance of the first subclass represents an atomic search condition; and
the instance of the second subclass represents a combined search condition.

7. (Previously Presented) The structure of claim 1, wherein:
the instance of the abstract superclass represents a group-by query element;
the instance of the first subclass represents a group; and
the instance of the second subclass represents a grouping set.
8. (Previously Presented) The structure of claim 1, wherein the combined query element comprises a nested query language element.
- 9-10. (Cancelled)
11. (Previously Presented) The structure of claim 10, wherein the means for receiving the query statement includes means for receiving the query statement from a user interface.
12. (Previously Presented) The structure of claim 10, wherein the means for receiving the query statement includes means for receiving the query statement from an application interface.
- 13-14. (Cancelled)
15. (Currently Amended) A method for hierarchically representing a query statement having an atomic query element and a combined query element related by a combined operator, the atomic query element being a noniterative query element, the combined query element including a left subelement and a right subelement, the method comprising:

defining an abstract superclass, wherein an instance of the abstract super class represents the query element and includes an operation on a combination of the combined operator, the atomic query element, and the combined query element, wherein the combined query element comprises an iterative query language element;

defining a first subclass of the abstract superclass, wherein an instance of the first subclass represents the atomic query element;

defining a second subclass of the abstract superclass, wherein an instance of the second subclass represents the combined query element including the left subelement and the right subelement, ~~and~~ wherein each of the left subelement and the right subelement are representable by an instance of the first subclass or the second subclass of the abstract superclass, wherein the instance of the abstract superclass represents a table reference, wherein the instance of the first subclass represents an unjoined table, and wherein the instance of the second subclass represents a joined table;

indicating a relationship between the first subclass and the second subclass defined by the combined operator;

receiving the query statement having the atomic query element and the combined query element associated by the combined operator;

populating a statement structure with instances of the abstract superclass, the first subclass, and the second subclass that represent the received query statement;

retrieving query elements represented by a given instance in response to a selection of the given instance populated within the statement structure;

building a query statement from the retrieved query elements; and

storing each of the abstract superclass, the first subclass, and the second subclass on a computer-readable medium.

16-18. (Cancelled)

19. (Previously Presented) The method of claim 15, wherein:

the instance of the abstract superclass represents a value expression;

the instance of the first subclass represents an atomic value expression; and

the instance of the second subclass comprises a combined value expression.

20. (Previously Presented) The method of claim 15, wherein:

the instance of the abstract superclass represents a search condition;

the instance of the first subclass represents an atomic search condition; and

the instance of the second subclass represents a combined search condition.

21. (Previously Presented) The method of claim 15, wherein:

the instance of the abstract superclass represents a group-by query element;

the instance of the first subclass represents a group; and

the instance of the second subclass represents a grouping set.

22. (Previously Presented) The method of claim 15, wherein the combined query element comprises a nested query language element.

23-24. (Cancelled)

25. (Previously Presented) The method of claim 15, further comprising receiving the query statement from a user-interface.

26. (Previously Presented) The method of claim 15, further comprising receiving the query statement from an application interface.

27-45. (Cancelled)

46. (Currently Amended) A computer readable storage medium encoded with a computer program for representing a query statement having an atomic query element and a combined query element related by a combined operator, the atomic query element being a noniterative query element, the combined query element including a left subelement and a right subelement, the computer program comprising computer executable instructions for:

defining an abstract superclass, wherein an instance of the abstract super class represents the query element and includes an operation on a combination of the combined operator, the atomic query element, and the combined query element, wherein the combined query element comprises an iterative query language element;

defining a first subclass of the abstract superclass, wherein an instance of the first subclass represents the atomic query element;

defining a second subclass of the abstract superclass, wherein an instance of the second subclass represents the combined query element including the left subelement and the right subelement, ~~and~~ wherein each of the left subelement and the right subelement are representable by an instance of the first subclass or the second subclass of the abstract superclass, wherein the instance of the abstract superclass represents a table reference, wherein the instance of the first subclass represents an unjoined table, and wherein the instance of the second subclass represents a joined table; and

indicating a relationship between the first subclass and the second subclass defined by the combined operator;

receiving the query statement having the atomic query element and the combined query element associated by the combined operator;

populating a statement structure with instances of the abstract superclass, the first subclass, and the second subclass that represent the received query statement;

retrieving query elements represented by a given instance in response to a selection of the given instance populated within the statement structure; and,

building a query statement from the retrieved query elements.

47. (Cancelled)

48. (Previously Presented) The computer readable medium of claim 46, wherein:

the instance of the abstract superclass represents a value expression;

the instance of the first subclass represents an atomic value expression; and

the instance of the second subclass comprises a combined value expression.

49. (Previously Presented) The computer readable medium of claim 46, wherein:

the instance of the abstract superclass represents a search condition;

the instance of the first subclass represents an atomic search condition; and

the instance of the second subclass represents a combined search condition.

50. (Previously Presented) The computer readable medium of claim 46, wherein:

the instance of the abstract superclass represents a group-by query element;

the instance of the first subclass represents a group; and

the instance of the second subclass represents a grouping set.